

ABSTRACT

A method for producing D-lactic acid in high yield, and to provide a method for producing D-lactic acid with high selectivity, in which optical purity is high and a by-product organic acid is small. In one aspect, a microorganism, wherein activity of pyruvate formate-lyase (pfl) is inactivated or decreased, and further activity of Escherichia coli-derived NADH-dependent D-lactate dehydrogenase (ldhA) is enhanced, is cultured to efficiently produce D-lactic acid. With regard to a method for enhancing ldhA activity, by linking, on a genome, a gene encoding ldhA with a promoter of a gene which controls expression of a protein involved in a glycolytic pathway, a nucleic acid biosynthesis pathway or an amino acid biosynthesis pathway, suitable results are obtained compared to the method for enhancing expression of the gene using an expression vector. A microorganism in which a dld gene is substantially inactivated or decreased is cultured to produce high quality D-lactic acid with reduced concentration of pyruvic acid.